GENERATION AND USE OF INTEGRATED CIRCUIT PROFILE-BASED SIMULATION INFORMATION

ABSTRACT

The invention includes a method and a system for generating integrated circuit (IC) simulation information regarding the effect of design and fabrication process decisions. One embodiment includes creating and using a data store of profile-based information comprising metrology signal, structure profile data, process control parameters, and IC simulation attributes.

Another embodiment is a method and system for generating a simulation data store using signals off test gratings that model the effect of an IC design and/or fabrication process. One application includes creation and use of a simulation data store generated using test gratings that model the geometries of the IC interconnects. The interconnect simulation data store may be used in-line for monitoring electrical and thermal properties of an IC device during fabrication. Other embodiments include methods and systems for generating and using simulation data stores utilizing a metrology simulator and various combinations of a fabrication process simulator, a device simulator, and/or circuit simulator. Information from the simulation data store may be used in-line in-situ during the design or fabrication process steps.